AANIPAL INSTITUTE OF TECHNOLOGY

## FOURTH SEMESTER B.Tech. (E & C) DEGREE END SEMESTER EXAMINATION **APRIL 2018**

Reg. No.

## **SUBJECT: INTRODUCTION TO COMMUNICATION SYSTEMS (ECE - 3283)**

## **TIME: 3 HOURS**

## **Instructions to candidates**

- Answer ALL questions. •
  - Missing data may be suitably assumed.

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- 1A. With neat block diagrams explain modulation and demodulation process used in electronic communication system.
- 1B. Explain the basic concept and components of a RFID system.
- 1C. Discuss the applications of Zig Bee and Bluetooth.
- 2A. Draw the block diagram of basic telephone system and explain each block.
- 2B. Compare PPI display with A-scope display in RADAR.
- 2C. If a RADAR has to have a maximum range of 60km, Calculate the maximum allowable PRF for unambiguous reception?
- 3A. With a neat block diagram explain the different subsystems of satellite.
- 3B. Explain the three different segments of GPS.
- 3C. Calculate the height of the geostationary orbit with the following data: Radius of earth=6371 km, Mass of earth= $5.972 \times 10^{24}$ kg, constant of gravitation= $6.67 \times 10^{-11}$ m<sup>3</sup>kg<sup>-1</sup>s<sup>-2</sup>.

(5+3+2)

(5+3+2)

(5+3+2)

4A. Explain power budget. Assume 10km fiber optic link is to be installed, connected at both ends with connectors and following data is available

- (i) 20 sections of fiber optic cable each length 500 meter with an attenuation of 1dB/km
- (ii) Connector loss of 1.3 dB/ connector
- (iii)Splice loss of 0.5 dB/splice
- (iv)Receiver sensitivity -50 dBm
- (v) System margin 5 dB
- 4B. Compare LED with LASER diode as optical source in optical fiber communication system.
- 4C. Explain the PIN photodiode with necessary diagrams.
- 5A. With a neat block diagram explain the signal flow in VoIP system.
- With neat diagrams explain the operation of cellular mobile communication system . 5B.
- 5C. Explain the two types of bending losses in optical fiber communication system.

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MAX. MARKS: 50